

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A computer implemented system for drafting a supply plan of an article or a service in a plurality of production lines capable of producing different articles or services, each production line including a plurality of supply stations capable of supplying the article or the service, the system comprising:

data storing means for storing unit supply man-hour data on work force and time required to supply the article or the service per unit and unit work-force-type-based cost data on cost per unit according to work force types;

required supply volume inputting means for inputting an entire required supply volume of the article or the service;

supply volume distributing means for distributing the input required supply volume to station supply volumes to be supplied from the supply stations based on a distribution parameter;

work force setting means for calculating a station supply man-hour required to supply the article or the service of the distributed station supply volume based on the unit supply man-hour data stored in the data storing means and setting a work-force-type-based work force for the calculated station supply man-hour based on a work force parameter;

cost calculating means for calculating a gross cost to supply the station supply volume from the supply stations based on the work-force-type-based work force set by the work force setting means and the unit work-force-type-based cost data stored in the data storing means;

parameter changing means for reiteratively changing the distribution parameter and the work force parameter; and

plan setting means for selecting a revised distribution parameter and a revised work force parameter corresponding to a minimum gross cost calculated by the cost calculating means using the work-force-type-based work force that is set by the work force setting means in response to changes in the distribution parameter and in the work force parameter by the parameter changing means and setting, as a supply plan, station supply volumes that are distributed by the supply volume distributing means using the revised distribution parameter and the revised work-force-type-based work forces for the supply stations.

2. (Previously Presented) The system according to claim 1, wherein the parameter changing means changes the distribution parameter within a suppliable range of the supply stations.

3. (Previously Presented) The system according to claim 2, wherein:
the suppliable range includes a regular suppliable range based on regular operation, and an irregular suppliable range based on irregular operation; and
the unit work-force-type-based cost data includes regular-operation unit work-force-type-based cost data on cost per unit according to work force types for regular operation, and irregular-operation unit work-force-type-based cost data on cost per unit according to work force types for irregular operation.

4. (Previously Presented) The system according to claim 3, wherein:
the irregular suppliable range includes an overtime suppliable range based on overtime service, and a holiday service suppliable range based on holiday service; and
the irregular operation unit work-force-type-based cost data includes overtime unit work-force-type-based cost data on cost per unit according to work force types for overtime service, and holiday service unit work-force-type-based cost data on cost per unit according to work force types for holiday service.

5. (Previously Presented) The system according to claim 1, wherein the parameter changing means changes ratios of the work force types as a factor of the work force parameter.

6. (Previously Presented) The system according to claim 5, wherein:
the work force types include regular employees and a plurality of types of temporary employees; and

the parameter changing means changes ratios of the work force types by changing percentages of the plurality of types of temporary employees.

7. (Previously Presented) The system according to claim 1, wherein the parameter changing means changes the work force in each of the supply stations as a factor of the work force parameter.

8. (Previously Presented) The system according to claim 7, wherein the parameter changing means changes a gross work force in the supply stations within a work force changeable range of the supply stations.

9. (Previously Presented) The system according to claim 1, wherein the parameter changing means reiteratively changes each of the parameters at a predetermined interval set for each of the parameters.

10. (Previously Presented) The system according to claim 1, wherein:
the supply stations are production lines for producing the article; and
the unit supply man-hour data are data on work force and time required to produce a single unit of the article.

11. (Previously Presented) The system according to claim 1, wherein:
the supply stations are stations for offering a predetermined service; and
the unit supply man-hour data are data on work force and time required to offer a single unit of the predetermined service.

12. (Currently Amended) A computer program product including computer-readable instructions to make a computer system for drafting a supply plan of an article or a service in a plurality of production lines capable of producing different articles or services, each production line including a plurality of supply stations capable of supplying the article or service, perform the functions of:

data storing means for storing unit supply man-hour data on work force and time required to supply the article or the service per unit and unit work-force-type-based cost data on cost per unit according to work force types;

required supply volume inputting means for inputting an entire required supply volume of the article or the service;

supply volume distributing means for distributing the input required supply volume to station supply volumes to be supplied from the supply stations based on a distribution parameter;

work force setting means for calculating a station supply man-hour required to supply the article or the service of the distributed station supply volume based on the unit supply man-hour data stored in the data storing means and setting a work-force-type-based work force for the calculated station supply man-hour based on a work force parameter;

cost calculating means for calculating a gross cost to supply the station supply volume from the supply stations based on the work-force-type-based work force set by the work force setting means and the unit work-force-type-based cost data stored in the data storing means;

parameter changing means for reiteratively changing the distribution parameter and the work force parameter; and

plan setting means for selecting a revised distribution parameter and a revised work force parameter corresponding to a minimum gross cost calculated by the cost

calculating means using the work-force-type-based work force that is set by the work force setting means in response to changes in the distribution parameter and in the work force parameter by the parameter changing means and setting, as a supply plan, station supply volumes that are distributed by the supply volume distributing means using the revised distribution parameter and the revised work-force-type-based work forces for the supply stations.

13. (Currently Amended) A computer-implemented supply plan drafting method of drafting a supply plan of an article or a service in a plurality of production lines capable of producing different articles or services, each production line including a plurality of supply stations capable of supplying the article or the service, the method comprising the steps of:

(a) distributing a required supply volume of the article or the service to station supply volumes to be supplied from the supply stations while reiteratively changing a distribution parameter;

(b) calculating a station supply man-hour required to supply the article or the service of the distributed station supply volumes based on unit supply man-hour data on work force and time required to supply the article or the service per unit and setting a work-force-type-based work force for the calculated station supply man-hour while reiteratively changing a work force parameter;

(c) calculating a gross cost to supply the station supply volumes to be supplied from the supply stations based on the set work-force-type-based work force and unit work-force-type-based cost data on work-force-type-based cost per unit; and

(d) selecting a revised distribution parameter and a revised work force parameter corresponding to a minimum of the gross cost calculated in response to changes in the distribution parameter and the work force parameter and setting as a supply plan station

supply volumes that are distributed using the revised distribution parameter and the revised work-force-type-based work forces for the supply stations.

14. (Original) The supply plan drafting method according to claim 13, wherein the step (a) changes the distribution parameter within a suppliable range of the supply stations.

15. (Original) The supply plan drafting method according to claim 14, wherein:
the suppliable range includes a regular suppliable range based on regular operation, and an irregular suppliable range based on irregular operation; and

the unit work-force-type-based cost data includes regular-operation unit work-force-type-based cost data on cost per unit according to work force types for regular operation, and irregular-operation unit work-force-type-based cost data on cost per unit according to work force types for irregular operation.

16. (Original) The supply plan drafting method according to claim 15, wherein:
the irregular suppliable range includes an overtime suppliable range based on overtime service, and a holiday service suppliable range based on holiday service; and

the irregular operation unit work-force-type-based cost data includes overtime unit work-force-type-based cost data on cost per unit according to work force types for overtime service, and holiday service unit work-force-type-based cost data on cost per unit according to work force types for holiday service.

17. (Previously Presented) The supply plan drafting method according to claim 13, wherein the step (a) reiteratively changes the distribution parameter at a predetermined interval.

18. (Previously Presented) The supply plan drafting method according to claim 13, wherein the step (b) reiteratively changes ratios of the work force types as a factor of the work force parameter.

19. (Previously Presented) The supply plan drafting method according to claim 18, wherein:

the work force types include regular employees and a plurality of types of temporary employees; and

the step (b) reiteratively changes ratios of the work force types by changing percentages of the plurality of types of temporary employees.

20. (Previously Presented) The supply plan drafting method according to claim 13, wherein the step (b) reiteratively changes the work force in each of the supply stations as a factor of the work force parameter.

21. (Previously Presented) The supply plan drafting method according to claim 20, wherein the step (b) reiteratively changes a gross work force in the supply stations within a work force changeable range of the supply stations.

22. (Previously Presented) The supply plan drafting method according to claim 13, wherein the step (b) reiteratively changes the work force parameter at a predetermined interval.

23. (Currently Amended) A computer-implemented production plan drafting method of drafting a production plan for producing an article in a plurality of production lines every plan-executing period including a plurality of operating days, comprising:

a production-line-based planned production volume provisionally determining step of allocating a planned production volume during the plan-executing period to the production lines;

an operating-time setting step of calculating an operating time in each of the production lines during the plan-executing period corresponding to a provisionally determined tact time in each of the production lines and the production-line-based planned

production volume, based on a relation among tact time, planned production volume and operating time in each of the production lines;

a number-of-workers calculating step of calculating the number of workers required in each of the production lines based on the set operating time;

a production-line-based personnel cost calculating step of calculating a personnel cost in each of the production lines after distribution of the calculated number of workers to worker categories with different hourly wages; and

a gross personnel cost calculating step of calculating a gross personnel cost in all the production lines by summing personnel costs in the respective production lines, wherein

a minimum gross personnel cost is calculated by reiteratively adjusting, in nested sequence, the number of workers distributed to the worker categories, the tact time, and the planned production volume allocated to each of the production lines.

24. (Original) The supply plan drafting method according to claim 23, wherein a gross personnel cost in all the production lines is calculated using a Petri net model.

25-27. (Canceled).

28. (Currently Amended) The system of claim 1, wherein the work force parameter includes personnel work force ~~parameters include~~ parameters of regular full-time workers, part-time workers, contract workers, regular pay rates, overtime pay rates and holiday pay rates.

29. (Currently Amended) The computer program ~~produce~~ product of claim 12, wherein the work force parameter includes personnel work force ~~parameter includes~~ parameters of regular full-time workers, part-time workers, contract workers, regular pay rates, overtime pay rates and holiday pay rates.

30. (Currently Amended) The method according to claim 13, wherein the work force parameter includes personnel work force ~~parameter includes~~ parameters of regular full-time workers, part-time workers, contract workers, regular pay rates, overtime pay rates and holiday pay rates.